

**PULSE OXIMETER SENSOR WITH PIECE-WISE FUNCTION**

**ABSTRACT OF THE DISCLOSURE**

A memory in a sensor is used to store multiple coefficients for a physiological parameter. In one embodiment, not only are the sensor's specific calibration coefficients  
5 stored in a memory in the sensor for the formula to determine oxygen saturation, but multiple sets of coefficients are stored. The multiple sets apply to different ranges of saturation values to provide a better fit to occur by breaking the R to SpO<sub>2</sub> relationship up into different pieces, each described by a different function. The different functions can also be according to different formulas for determining oxygen saturation.

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